



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,151	12/15/2003	Steven E. Boor	30521/3060	3664

4743 7590 08/02/2005

MARSHALL, GERSTEIN & BORUN LLP  
233 S. WACKER DRIVE, SUITE 6300  
SEARS TOWER  
CHICAGO, IL 60606

EXAMINER

ROBBINS, JANET L

ART UNIT PAPER NUMBER

2857

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/736,151

Applicant(s)

BOOR ET AL.

Examiner

Janet Robbins

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11 and 13-32 is/are rejected.
- 7) ☒ Claim(s) 9 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>15148 1-15-04</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 15, 16", 17", 19', and 28.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "12" has been used to designate both an audio source and a telecoil in all three figures.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The disclosure is objected to because of the following informalities: in paragraph [0016], In 3, the "threshold value input 19" should be changed to --threshold value input19'--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1, 6, 7, 10, 11, 14, 15, 16, 20, 21, 23, 24, 25, 29, 30, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Sacha et al. (US PGPub 2004/0052392 A1).

With respect to claims 1, 14, and 24, Sacha et al. teaches an integrated circuit being operably disposed between a plurality of audio sources and a signal processing circuit, the integrated circuit comprising (Fig. 3; [0011], [0044], [0049]; [0061]):

a magnetic field sensor for detecting an external magnetic field presence (Fig. 13: 1307; [0072], ln 19-23);

a magnetic field threshold comparator and a magnetic field threshold value, the magnetic field threshold comparator being operably coupled to the magnetic field sensor and the magnetic field threshold value (Fig. 13: 1310; [0072], ln 34-38); and,

a gate being operably responsive to the magnetic field threshold comparator and the sensor, the gate including a plurality of gate inputs and a gate output, the plurality of gate inputs being operably coupled to the plurality of audio sources, and the gate output

Art Unit: 2857

being operably coupled to the signal processing circuit, wherein one of the plurality of audio sources is selected to be presented to the signal processing circuit in response to the magnetic field threshold comparator output (Fig. 2-6, 8; [0011]; [0051]; [0054])(Fig. 13 can be inserted into Fig. 8 as the magnetic sensor (115) and the selection circuit (118) in one embodiment of the disclosed invention).

With respect to claim 11, Sacha et al. teaches an assisted-listening device ([0003]) having an integrated circuit based magnetic field sensor ([0064]) and gate selector ([0083]), a method for facilitating listening comprising the steps of:

providing a magnetic field threshold level ([0072], In 34-38);

receiving a magnetic field input level ([0066];

comparing the magnetic field threshold level to the magnetic field input level;

and, selecting one of the plurality of audio sources to be presented to a signal processing circuit in response to the comparison of the magnetic field threshold level and the magnetic field input level ([0072]).

With respect to claim 15, Sacha et al. teaches a magnetic field threshold value ([0072], In 34-38); and,

a magnetic field threshold comparator being operably connected to the magnetic field threshold value, the sensor, and the gate, the magnetic field threshold comparator for determining the presence of the magnetic field in excess of the magnetic field threshold value and providing an output to the gate responsive thereto ([0066], [0072]).

Art Unit: 2857

With respect to claims 6, 20 and 29, Sacha et al. further teaches the magnetic field sensor is a micro-electromechanical system (MEMS) device ([0047], In 14-15; [0054], In 16-17).

With respect to claims 7, 21 and 30, Sacha et al. further teaches the magnetic field sensor is an external telecoil (Fig. 8; [0065]; [0072], In 16).

With respect to claims 10, 23 and 32, Sacha et al. teaches the integrated circuit of parent claim one being operably coupled to a signal processing device selected from the group consisting of biasing, amplifying, filtering, and rectifying devices ([0011]; [0043]: Sacha et al. discloses amplification and filtering in his signal processing device).

With respect to claims 16 and 25, Sacha et al. teaches a magnetic field presence as a magnetic B-field ([0010], [0012]).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 22, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sacha et al. (US PGPub 2004/0052392 A1) and further in view of Doyle et al. ("High Sensitivity, Low Power, Silicon Magnetic Field Detector") (hereinafter Doyle). Sacha et al. teaches limiting the power consumption ([0069]), but does not specify the

Art Unit: 2857

power range as being below 100 $\mu$ W. Doyle discloses a magnetic field sensor suitable for a portable device which draws only 100nA from a 2V supply (200nW) with the magnetic sensor (Doyle: Abstract, Background paragraph 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the magnetic sensor of Sacha et al. to use the low power magnetic field sensor as taught by Doyle because portable systems which draw very little power will prolong battery life.

9. Claims 3, 17, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sacha et al. (US PGPub 2004/0052392 A1) and further in view of Popovic et al. (US Patent 4,700,211). Sacha et al. teaches using magnetic field sensors with a hearing aid device, but does not teach using a lateral bipolar magnetotransistor. Popovic et al. teaches using lateral bipolar magnetotransistor as a magnetic field sensor (Popovic et al.: col 1, ln 43-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Sacha et al. to include the lateral bipolar magnetotransistor of Popovic et al. because the lateral bipolar magnetotransistors are highly sensitive to the strength and orientation of a magnetic field (Popovic et al.: col 1, ln 11-13).

10. Claims 5, 19 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sacha et al. (US PGPub 2004/0052392 A1) and further in view of Bren et al. (US PGPub 2003/0059073). Sacha et al. teaches the use of a magnetic field sensor, but does not teach using a Hall effect sensor. Bren et al. teaches a hearing aid in which the magnetic field sensor is a Hall effect sensor ([0034], ln 37-38; [0037], ln 11-13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify

Art Unit: 2857

the teachings of Sacha et al. to include the Hall effect sensor of Bren et al. because the Hall effect sensors are low cost, have a greater sensitivity, and have more rugged construction.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sacha et al. (US PGPub 2004/0052392 A1) and further in view of Lundh (US PGPub 2004/0179707 A1). Sacha et al. does not teach a manual override. Lundh teaches a manual override (Lundh: [0016]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Sacha et al. to include the manual override of Lundh because the manual override allows the user to make softer speech signals more audible (Lundh: [0016]).

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sacha et al. (US PGPub 2004/0052392 A1) and further in view of Svajda et al. (US PGPub 2002/0039428 A1). Sacha et al. teaches providing an integrated preamplifier operably coupled between the selected audio source and the gate (Fig. 9: 143; [0062]). Sacha et al. does not teach the preamplifier as a telecoil preamplifier. Svajda et al. teaches implementing a telecoil amplifier between the telecoil and the signal processor (Svajda et al.: [0009]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Sacha et al. to include the telecoil amplifier of Svajda et al. because the use of the integrated amplifier with the telecoil shapes the transfer function in the audio frequency signal range (Svajda et al.: [0002]).

13. Claims 4, 18, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sacha et al. (US PGPub 2004/0052392 A1) and further in view of Scheel (US



Art Unit: 2857

Patent 5,592,079). Sacha et al. teaches the magnetic field sensor as a MAGFET ([0047]), but does not teach the MAGFET as specifically being split-drain. Scheel teaches using a MAGFET with two drains (Scheel: col 3, ln 32-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Sacha et al. to include the split-drain MAGFET of Scheel because the split drain permits measurement of the differential current (Scheel: col 3, ln 35-40).


***Allowable Subject Matter***

14. Claims 9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet Robbins whose telephone number is 571-272-8584. The examiner can normally be reached on weekdays from 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Janet Robbins

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800